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Agriculture development and food security

Agriculture development and food security

Report of the Secretary-General

Summary

The present report examines challenges to the achievement of food and nutrition security and provides an update on progress in implementing sustainable agricultural policies and practices in line with the Five Rome Principles for Sustainable Global Food Security. The main challenges to such security include low productivity and low investment in smallholder agriculture, worsening land degradation and water scarcity in many agricultural areas, the intensifying effects of climate change on agricultural production and the resultant chronic or periodic shortfalls in supply. There has been some progress since 2008 in raising agricultural investment rates in developing countries, notably in Africa, and in strengthening social protection of vulnerable groups, including through initiatives aimed not only at tackling hunger but at ensuring balanced nutrition. Nevertheless, long-term challenges to productivity and food and nutrition security as a result of resource degradation are only now beginning to be addressed. The adoption of the outcome document of the United Nations Conference on Sustainable Development, "The future we want" (resolution 66/288) is an encouraging development in the global fight against land degradation.

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I. Introduction

1. The General Assembly, at its sixty-sixth session, in its resolution 66/220 entitled "Agriculture development and food security", requested the Secretary-General to report at its sixty-seventh session on developments related to issues highlighted in the resolution and on progress in the implementation of the outcome of the 2009 World Summit on Food Security. The present report has been prepared in response to that request.

2. As stated in the Plan of Action adopted at the World Food Summit, held in Rome in 1996, "Food and nutrition security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".[1] Food and nutrition security therefore covers availability, access, utilization and stability issues, and, because of its focus on the attributes of individuals, also includes their energy, protein and nutrient needs for life, activities, reproductive health, growth and long-term capabilities. Food security is a precondition for the full enjoyment of the right to food.

3. The Five Rome Principles for Sustainable Global Food Security,[2] contained in the Declaration of the World Summit on Food Security adopted in Rome in 2009, provide a strategic underpinning for coordinated action by all stakeholders at the global, regional and country levels while embracing a twin-track approach to fighting hunger. They call on the international community to:

(a) Invest in country - owned plans, aimed at channelling resources to well - designed and results-based programmes and partnerships;

(b) Foster strategic coordination at national, regional and global levels to improve governance, promote better allocation of resources, avoid duplication of efforts and identify response-gaps;

(c) Strive for a comprehensive twin - track approach to food security;

(d) Ensure a strong role for the multilateral system by sustained improvements in efficiency, responsiveness, coordination and effectiveness of multilateral institutions;

(e) Ensure sustained and substantial commitment by all partners to investment in agriculture and food security and nutrition, with the provision of necessary resources in a timely and reliable fashion, aimed at multi - year plans and programmes.

4. The report examines challenges to the achievement of food and nutrition security and provides an update on progress in implementing sustainable agricultural policies in line with the Rome Principles. Inputs from the Secretary-General's High-level Task Force on Global Food Security, as well as contributions from the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP), have enhanced its content.

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[1] Food and Agriculture Organization of the United Nations, *Report of the World Food Summit, 13-17 November 1996* (WFS 96/REP), part I, appendix.

[2] FAO, document WSFS 2009/2.

II. Overview

A. Current state of food and nutrition insecurity in the world

5. Currently, there are 1.4 billion people living in extreme poverty, including close to 925 million who suffer from hunger and more than 200 million children under age 5 who suffer from malnutrition. In addition, micronutrient malnutrition, often referred to as "hidden hunger", affects approximately 2 billion people worldwide, more than one third of the global population. Close to 10 million children die before their fifth birthday every year as a consequence of malnutrition.

6. The food crisis of 2007-2008, which was followed by the financial and economic crisis of 2009, drew glaring attention to the daily challenges faced by millions of families around the world in their struggle to overcome hunger and poverty and establish stable livelihoods that support a dignified way of life. Despite the efforts of many, and the commitment of the international community in the Millennium Declaration (resolution 55/2) to reduce by half the proportion of people who suffer from hunger by 2015, persistent hunger and malnutrition remain the norm for millions of human beings.

7. If hunger and food insecurity are to be overcome, an estimated 60 per cent increase in agricultural productivity, including a 100 per cent increase in developing countries, will be necessary by 2050. However, the world's ecosystems, biodiversity and associated goods and services are also under increasing pressure from the loss of crop diversity, the overexploitation of fish stocks, deforestation, degradation and losses of arable land and aquatic ecosystems, growing competition for increasingly scarce water and the impact of climate change. Responsible environmental stewardship as well as greater fairness in food management and distribution are important contributing factors to the achievement of universal food and nutrition security.[3]

B. Current economic situation

8. Following many decades of decline, food prices have risen over most of the last decade, becoming increasingly volatile, and they are likely to remain high and to fluctuate sharply as a result of many complex factors. While some large countries were able to deal with the worst of the world food crisis between 2006 and 2008, populations in many small import-dependent countries experienced large price increases that had adverse effects on their lives and which, even if temporary, may have had permanent effects on their future earning capacity and ability to escape poverty.[4]

9. Climate change and its associated adverse effects on agricultural production, increased linkages between energy and agricultural markets owing to the growing demand for biofuels and increased financialization of food and agricultural

[3] FAO, 2012, *Towards the future we want: End hunger and make the transition to sustainable agricultural and food systems* (see www.fao.org).

[4] FAO, IFAD and WFP, 2011, *The State of Food Insecurity in the World 2011: How does international price volatility affect domestic economies and food security?* (see www.fao.org).

commodities all suggest that price volatility is here to stay, and that it may actually increase.

10. There are additional challenges related to the declining rates of yield for some crops. According to the International Food Policy Research Institute, even without climate change, the price of rice, maize and wheat is projected to increase by 25 per cent, 48 per cent and 75 per cent, respectively, by 2050, in a business-as-usual scenario.[5]

11. Higher prices act as incentives for increased production, and are a boom to farmers who are able to access markets. For consumers, however, in particular poor consumers, the effects can be daunting. Many people living in extreme poverty spend nearly 70 per cent of their income on food. In addition, to the roughly 1 billion who are undernourished, there are several billion others who live at the margins of food insecurity and who are vulnerable to food price increases and are poorly served by or cannot access safety nets. Rising food prices have been key elements of destabilization and civil unrest in a number of countries in recent years, with serious disturbances and food-related riots affecting, inter alia, Bangladesh, Burkina Faso, Cameroon, Egypt, Ethiopia, Mexico, Morocco, Mozambique, the Philippines, Senegal, Uganda and Zimbabwe.[6]

12. Overall, increasing incomes and improving access are likely to provide better long-term solutions than artificially trying to keep domestic prices low through the use of price controls and restrictions, which can have a negative effect in rural areas, reducing incentives to provide the needed increase in production, and have negative spillover effects on international markets. Moreover, the structural causes of hunger and malnutrition often prevent progress, and efforts to overcome them require high-level political commitment and prioritization in the fight against hunger and malnutrition.

C. Structural causes of hunger and malnutrition

13. The structural causes of hunger and malnutrition are linked to lack of economic and social empowerment, natural resource degradation and scarcity, climatic pressures and demographic, social and governance issues.[7] Protracted political crises or conflicts are the most devastating of such events, destroying crops and laying waste to natural resources, preventing provision of food assistance and undermining progress in sustainable development. In addition, transboundary threats such as plant pests, animal diseases and food safety are causes for concern.

14. Hunger and malnutrition also persist owing to the lack of economic and social empowerment experienced by millions of people worldwide. The rural poor often

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[5] See International Food Policy Research Institute, *2011 Global Food Policy Report* (Washington, D.C., 2012).

[6] See *Food and Agriculture: The future of sustainability* (Sustainable Development in the 21st Century project) (United Nations, Department of Economic and Social Affairs, Division for Sustainable Development, 2012).

[7] Global Strategic Framework for Food Security and Nutrition, consolidated version agreed at the plenary of the intergovernmental open-ended working group for Global Strategic Framework for Food Security and Nutrition, Rome, 27-29 June and 19 July 2012 (final version will be submitted to the thirty-ninth session of the Committee on World Food Security in October 2012).

lack secure access to productive resources such as fertile land, water, agricultural inputs, credit and knowledge, while irregular low-wage employment or unemployment are commonplace among the urban poor.

15. Demographic pressures play an important role in persistent hunger and malnutrition. These are exacerbated by the lack of effective social protection systems, in particular for women who experience many forms of legal and cultural discrimination. This includes the specific nutritional vulnerabilities of women and children, which are often not adequately addressed. Persistent marginalization and discrimination against vulnerable groups, including indigenous peoples and internally displaced persons or refugees, contributes, in many cases, to food insecurity and malnutrition.

16. Natural and human-induced disasters, the degradation of ecosystems and the depletion of natural resources are also major causes of food insecurity. The environmental integrity of many ecosystems is either currently being challenged or facing the risk of progressive breakdown in productive capacity as a result of the combined effects of excessive demographic pressure and unsustainable agriculture use and practice. The food insecure, many of whom live in marginal areas, are disproportionately exposed to natural hazards and are least able to cope with the effects of crises and shocks.

D. Environmental impacts on agriculture and food security

17. The world's cultivated area has grown by 12 per cent over the past 50 years, and its irrigated area has doubled over the same period, accounting for most of the net increase in cultivated land. In the same time period, agricultural production has increased between 2.5 and 3 times owing to significant increases in the yields of major crops. However, global achievements in production in some regions have been associated with degradation of land and water resources and the deterioration of related ecosystem goods and services, including biodiversity, biomass, carbon storage, soil health, water storage and supply. As a result, agriculture productivity growth has slowed in many parts of the world.[8]

Climate-related extreme weather events

18. Agriculture is the one human endeavour likely to be most affected by changes in climate. The Intergovernmental Panel on Climate Change has noted that farmers in developing countries, particularly sub-Saharan Africa, will be hit the hardest by the impacts of climate change. Climate-related changes, including extreme temperatures and volatile weather patterns, pose many threats to agriculture, including reduction of productivity, production stability and incomes. To address the challenges ahead, additional funding will be needed for agricultural research on climate-related adaptation and adaptation projects in developing countries. Currently, financing for such projects from the Global Environmental Facility remains a small fraction of what is invested in the clean development mechanism and other carbon-market projects.[6]

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[8] See P. Kumar and S. Mittal, "Agricultural Productivity Trends in India: Sustainability Issues", *Agricultural Economics Research Review*, Vol. 19.

Land degradation

19. Fully one quarter of global land resources are currently ranked as highly degraded, with another 8 per cent as moderately degraded, 36 per cent as stable or slightly degraded and 10 per cent as improving.[9] The definition of degradation extends beyond soil and water degradation to include an assessment of other aspects of affected ecosystems, such as biodiversity loss. Worldwide, large areas of all continents are experiencing land degradation, with particularly a high incidence along the west coast of the Americas, across the Mediterranean region of Southern Europe and North Africa, in the Sahel and the Horn of Africa and throughout Asia. Although land degradation is a generalized risk, some 40 per cent of the world's degraded lands are found in areas with the highest incidence of poverty.

Water scarcity

20. According to the International Water Management Institute, with more than 70 per cent of global surface and groundwater extraction being used for the production of food and other agricultural products, the agriculture sector is the biggest single user of water. Intensive extraction of groundwater in key cereal producing regions around the world are reducing aquifer storage capacity and removing the accessible groundwater supply upon which rural communities rely.[10] Water use has been increasing globally at more than twice the rate of population growth over the last century, and an increasing number of regions are nearing the limit at which water services can be sustainably delivered. Lack of water is a major cause of famine and undernourishment. By 2025, it is expected that 1.8 billion people will be living in countries or regions with absolute water scarcity and two thirds of the world population may be experiencing stress conditions.[11]

III. Current and emerging challenges to enhancing global food and nutrition security

A. Growing demand for food crops to produce energy

21. Global agriculture is increasingly linked to energy markets. Oil price projections in the macroeconomic assumptions contained in the Organization for Economic Cooperation and Development (OECD)-FAO publication *Agricultural Outlook 2012-2021* are on average about $25 above those used last year, ranging from $110 to $140 per barrel over the period. The higher oil prices are a fundamental factor behind the higher agricultural commodity price projections, affecting not only oil-related costs of production but also increasing the demand for biofuels and the agricultural feedstocks used in their production. Support for biofuels in 2009, which was estimated at $20 billion, the bulk of it in the United States of America and the countries members of the European Union, is projected to

[9] See FAO, 2011, *The State of the World's Land and Water Resources for Food and Agriculture: Managing systems at risk* (Rome, 2011).

[10] Countries in the Middle East, North Africa and Central Asia are withdrawing water in excess of critical thresholds.

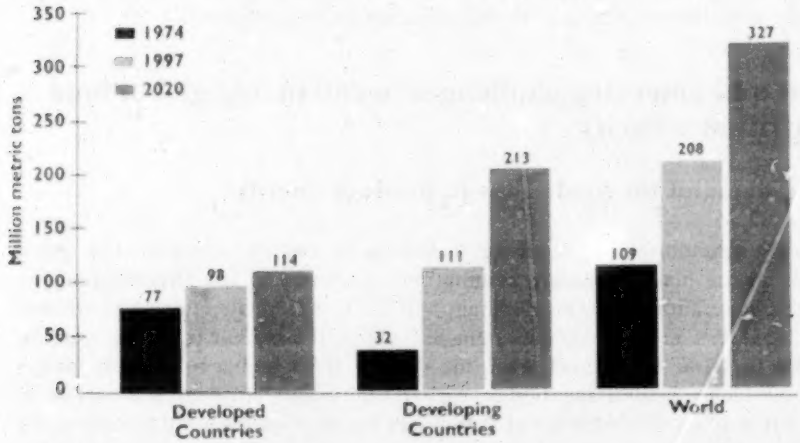
[11] FAO defines absolute water scarcity as less than 500 cubic metres per year per capita, and stress conditions as between 500 and 1,000 cubic metres per year per capita.

rise to $45 billion by 2020.[12] By 2021, global production of bioethanol and biodiesel is projected to almost double, with production heavily concentrated in Brazil, the United States and the European Union. Biofuels, which are based mainly on agricultural feedstocks, are expected to consume a growing share of the global production of sugarcane (34 per cent), vegetable oil (16 per cent) and coarse grains (14 per cent) by 2021. Commodity prices tend to be linked with global energy prices; as energy prices fluctuate and trend upwards, so do food prices.[13] The high dependence of the global food sector on fossil fuels is also a growing concern.[14]

B. Evolving patterns of food consumption

22. The heightened demand for livestock products in developing countries is creating significant new pressures for grains and water. Recent increases in food consumption per capita are mainly due to overall economic progress of developing countries, although world figures are decisively influenced by significant gains made in some of the most populous among them, in particular in Brazil, China, Indonesia and Mexico. As per capita food consumption has increased, there has been a parallel change in dietary patterns in the countries that experienced such growth. Demand for livestock products in developing countries has increased considerably since the 1970s, and the resources in terms of the land, water, grain and energy required to produce them have risen accordingly, as shown in the figure below.[6]

World demand for meat



Source: International Food Policy Research Institute, Impact projections, June 2001, and FAO statistics for 1974.

[12] See International Energy Agency, *World Energy Outlook 2010*.

[13] OECD-FAO, *Agricultural Outlook 2012-2021* (http://www.oecd.org/site/oecd-faoagriculturaloutlook/).

[14] FAO, *Energy-smart food for people and climate*, issue paper (Rome, 2011) (http://www.fao.org/docrep/014/i2454e/i2454e00.pdf.

C. Food losses and waste

23. According to a study carried out under the auspices of FAO, roughly one third of the food produced in the world for human consumption every year, approximately 1.3 billion tons, is lost or wasted. Losses and waste happen all along the food chain, with significant differences depending on region and specific product. This loss and waste corresponds to more than 10 per cent of the world's total caloric energy consumption.[15] Food losses and waste occur in both high- and low-income countries, although following different patterns. In medium- and high-income countries, food is largely wasted at the consumption stage. In low-income countries, it is lost mostly during the early and middle stages of the food supply chain — much less is wasted at the consumer level. The causes of food losses and waste in low-income countries are mainly associated with financial, managerial and technical limitations in harvesting techniques, storage and cooling facilities in difficult climatic conditions and to infrastructure, packaging and marketing systems. Given that many smallholder farmers in developing countries live on the margins of food insecurity, a reduction in food losses could have an immediate and significant impact on their livelihoods.

24. Most losses are avoidable, to some degree, and certain types of waste could be eliminated almost entirely. In developing countries, investments and other measures to improve the processing, storage and transport infrastructure should address much of the problem of waste from post-harvest losses. In developed countries, possible avenues for policy action include engaging with the private sector to increase awareness and develop voluntary agreements, reviewing regulations that may inadvertently generate avoidable waste, supporting research to improve storage, prolong shelf life and identify better ways to detect deterioration and implementing public education campaigns.

D. Adapting to climate change

25. The impacts of climate change are reducing productivity and leading to greater instability in production in the agricultural sector in communities that already have high levels of food insecurity and environmental degradation and limited options for coping with adverse weather conditions.[16] Strengthening the resilience of the agricultural sector to climate change is a high priority for agricultural research. Adaptation measures involving organic soil nutrient enhancement and other ecologically sound methods can contribute to reducing greenhouse gas emissions, an approach popularly known as climate-smart agriculture. Conservation agriculture, agroforestry, improved livestock and water management, integrated pest management and ecosystem approaches to fisheries and aquaculture can all make important contributions both to enhancing food and livelihood security and generating environmental benefits.

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[15] Food losses refer to the decrease in edible food mass available for human consumption throughout the different segments of the supply chain. Food losses resulting from decisions to discard food that still has value to others are referred to as food waste.

[16] See D. B. Lobell, W. Schlenker and J. Costa-Roberts, "Climate Trends and Global Crop Production since 1980", *Science*, vol. 333, No. 6042.

E. Protracted crises and conflicts

26. Countries in protracted crises require special attention. Often exposed to long-lasting or recurring crises, such countries have limited capacity to take action in a number of areas, a fact that exacerbates food insecurity and related problems. The Horn of Africa and the Sahel are the two most serious areas of protracted crises, food insecurity, hunger and malnutrition in the world, with a combined population of nearly 300 million, most of whom live on less than $1 a day. Those countries largely depend on agriculture, with livestock contributing up to 20 per cent of the economy in a very fragile and drought-prone environment.

IV. Progress in fostering coordination, cooperation and effectiveness

A. High-level Task Force on the Global Food Security Crisis

27. The High-level Task Force, established by the United Nations System Chief Executives Board for Coordination (CEB) in April 2008, brings together the heads of the United Nations specialized agencies, funds and programmes, as well as relevant bodies of the Secretariat, the World Bank, the International Monetary Fund (IMF), OECD and the World Trade Organization. The primary aim of the Task Force is to promote a comprehensive and unified response to the challenge of achieving global food security. In 2008, the Task Force agreed on a Comprehensive Framework for Action, which set out the joint position of the members of the Task Force. The framework, by providing Governments, international and regional organizations and civil society groups with a range of policies and actions from which to draw appropriate responses, is intended to be a catalyst for action in this field.

28. In 2010, the Comprehensive Framework for Action was updated to better reflect the evolving context and new elements considered necessary for a comprehensive approach, including gender, climate change, price volatility and sustainability. The updated Comprehensive Framework for Action is the United Nations system-wide coordinated approach for supporting country action that leads to sustainable and resilient rural livelihoods and food and nutrition security for all. The framework reaffirms the realization of the right to food through the twin-track approach of responding to the immediate needs of the most vulnerable people through effective safety nets while simultaneously building longer-term livelihood and food production resilience. In August 2011 the Task Force prepared a summary of the framework, which was widely disseminated during 2012.[17] The Task Force is currently undertaking internal review and external evaluation of its achievements and outcomes in order to provide evidence and guidance for reorienting its focus on the five objectives of the Secretary-General's Zero Hunger Challenge and to guide a coherent United Nations system-wide approach to food and nutrition security.

[17] See http://www.un-foodsecurity.org/node/842.

B. Zero Hunger Challenge

29. The Zero Hunger Challenge is the Secretary-General's vision for a future free from hunger. Launched at the United Nations Conference for Sustainable Development in Rio de Janeiro in June 2012, it envisions a world where everyone enjoys the right to adequate food, women are empowered, food systems are sustainable and resilient, support to family farming is increased, poverty is reduced through agriculture and rural development and good nutrition is assured from the start of pregnancy through every child's second birthday. It is an advocacy platform, with five objectives:

(a) 100 per cent access to adequate food, all year round;

(b) Zero stunted children under 2 years of age;

(c) All food systems are sustainable;

(d) 00 per cent growth in smallholder productivity and income;

(e) Zero food is lost or wasted.

30. The Zero Hunger Challenge is an invitation to all stakeholders to take action towards achieving zero hunger. It is rooted in current processes such as the Committee on World Food Security and the High-level Task Force, but seeks a renewed commitment to promises already made, builds on existing work being undertaken and encourages greater focus on food and nutrition security by all.[18]

C. Committee on World Food Security

31. The reformed Committee on World Food Security is a new model of governance for global food security based on multilateral and multi-stakeholder engagement. An essential part of the reform was the creation of the High-level Panel of Experts on Food Security and Nutrition, an innovative science-policy interface to advise the Committee and to present it with evidence-based analysis and advice on issues of importance so as to provide for better-informed policy debates. In the course of the 2009 reform, the Committee was seen as the foremost platform for a broad range of committed stakeholders working together in a coordinated manner, based on principles of inclusiveness, country ownership and flexibility, in line with regional and country circumstances. Similar multi-stakeholder platforms and alliances are envisaged at the regional and national levels. In May 2012, the Committee endorsed the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security, the first comprehensive, global instrument on tenure and its administration prepared through intergovernmental negotiations.

D. Cooperation among Rome-based agencies

32. The development of a joint response to the Horn of Africa and Sahel crises, coordination of the United Nations Conference for Sustainable Development and collaboration in the preparation of reports for the Group of 20 provided clear

[18] http://www.un-foodsecurity.org/node/1356.

impetus for strengthening cooperation between FAO, IFAD and WFP. The concept of resilience is key to ongoing collaboration in field operations. The joint response to the situation in the Horn of Africa and the Sahel demonstrated the range, scope and value of strengthened collaboration among the agencies. Collaboration is also deepening through projects adopting resilience-based approaches such as "Purchase for Progress" and "Purchase from Africans for Africa". Both projects involve geographic overlap and the development of a joint strategy on resilience, take stock of good practices in protecting and improving livelihoods, explore possibilities for joint advocacy and fundraising and develop joint messages for resource partners.

33. The three agencies continued to strengthen their collaboration with other institutions such as OECD, the World Bank and the United Nations Conference on Trade and Development (UNCTAD), in preparing inter-agency reports for the Group of Twenty and the Group of Eight and actively promoting responsible agricultural investment, including biodiversity, which fosters work on agricultural biodiversity, in the lead-up to the United Nations Conference for Sustainable Development.

E. Coordination on nutrition

34. The Scale Up Nutrition initiative was introduced in 2010 to encourage increased political commitment and programmatic alignment to accelerate reductions in levels of global hunger and undernutrition. The emphasis of the initiative is on women and children under 2 years of age, and in this regard it focuses on the 1,000-day window of opportunity between pregnancy and the child's second birthday, which is the most critical time for fostering the healthy physical and mental development of children. Partners in the initiative are increasing the resources made available to participating countries and better aligning their support to national plans for implementing specific nutrition interventions that have been shown to be effective. They are also helping countries to implement their nutrition-sensitive development strategies through multiple sectors. The overall goal of the initiative is to ensure that the potential of young lives, particularly the intellectual, physical and social progress of children, is increased, thus contributing to the economic development of nations.

35. Since the initiative was introduced, Heads of State from 28 countries with high burdens of undernutrition have committed to scale up nutrition, and others are supporting their efforts. Those countries are home to 53 million stunted children under the age of 5, or 27 per cent of all stunted children, including millions of women affected by anaemia in pregnancy and children who experience micronutrient deficiencies. The Group of 20 has expressed support for the initiative, and both development partners and developing countries are represented among the States members of the Group of 20.[19] Over 100 global, regional and national development partners from civil society, academia, bilateral and multilateral organizations support the initiative, and the speed with which it has evolved in the last 18 months is an indicator of increasing political commitment to nutrition. In 2013, the 20-year review of the International Conference on Nutrition will convene as the first high-level intergovernmental conference devoted to addressing the world's nutrition problems in the twenty-first century and will ensure support for nutrition security actions.

[19] See UNICEF, *Tracking Progress on Child and Maternal Nutrition* (New York, 2009).

F. FAO/UNEP: sustainable consumption and production

36. The FAO/UNEP joint programme on sustainable consumption and production in food and agriculture is catalysing partnerships among United Nations agencies, other international agencies, Governments, industry and civil society whose activities, together, can promote the essential transition to sustainability. The programme promotes international cooperation in promoting policies, investments, production and consumption patterns that enhance food security while meeting economic and environmental needs. A meeting convened in May 2012 focused on key activity areas identified by the Marrakech task force on sustainable consumption and production in food and agriculture, and featured panellists from Costa Rica, the Netherlands, Ghana and Switzerland, who shared their experiences in implementing such activities in the food sector. FAO, with UNEP, will implement the programme, which involves a task force comprised of representatives of Member States, United Nations agencies, the private sector and civil society.[20]

G. Group of 8: New Alliance for Food Security and Nutrition

37. At their meeting in May 2012, the leaders of the Group of 8 agreed to launch the New Alliance for Food Security and Nutrition, which aims to accelerate the flow of private capital to African agriculture, take to scale new technologies and other innovations that can increase sustainable agricultural productivity and reduce the risk borne by vulnerable economies and communities in an effort to lift 50 million people out of poverty over the next decade. The New Alliance is guided by: a collective commitment to invest in credible, comprehensive and country-owned plans; develop new tools to mobilize private capital, spur and scale innovation and manage risk; and engage and leverage the capacity of private sector partners, including women and smallholder farmers, entrepreneurs and domestic and international companies.[21] It supports the processes of the Comprehensive Africa Agriculture Development Programme, which is designed to catalyse private sector investment, with $3 billion already committed.

V. Progress in implementing the twin-track approach

A. Short-term safety nets

38. The twin-track approach outlined in the updated Comprehensive Framework for Action and endorsed in the Five Rome Principles[1] emphasizes four dimensions in its first track, focusing on the social protection aspect of ensuring food security: availability, access, utilization and stability. Safety nets are critical to meeting the immediate needs of people who lack the purchasing power to access food. Employment guarantee programmes are a key element of productive safety net programmes and have mitigated the impact of extreme food shortages in the 2010-2011 Horn of Africa drought-induced food crisis. The impact of the crisis was less

[20] At its third meeting in April 2012, the task force defined a pluriannual programme of work and created four groups to implement it on four activity clusters: (a) information platforms; (b) communications; (c) enabling conditions; and (d) market-based approaches.

[21] See http://www.whitehouse.gov/the-press-office/2012/05/19/camp-david-declaration.

severe in Ethiopian communities that had well-developed productive safety net programmes than in the neighbouring countries that lacked them. Such programmes require years of investment, capacity-building and systems development. Within communities at risk of recurrent crisis, such programmes, which can be scaled up rapidly, should be implemented.

39. The Comprehensive Framework for Action reported on the adoption by the United Nations system of the Social Protection Floor Initiative, which encompasses a set of transfers, services and facilities ensuring that all citizens worldwide may enjoy all of their human rights. In 2011, an ILO-WHO advisory group chaired by the Head of the United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women) advocated the universal adoption of a social protection floor for fair and inclusive globalization. The recommendation concerning national floors for social protection was adopted at the 2012 meeting of the leaders of the Group of 20 and is being endorsed within ILO conference processes.

40. Such global processes create a context within which national policies for resilient food systems and nutrition security are being advanced along the twin tracks. The social protection floor is now a critical element of policies for food and nutrition security in most countries, especially in those where resilience is undermined by recurrent crises. Although they can be undermined by political instability and budget shortages, they are increasingly considered to be an essential element of long-term support, key to the long-term well-being of children and insurance in the face of an unstable climate.

41. Experience in many communities affected by long-term instability suggests that most durable social protection floor and productive safety net schemes are built on traditional community-based support schemes, including those that are faith-based, which can continue to function when central government capacity is reduced. The "3N" initiative in the Niger is an example of a national programme explicitly focusing on the building of long-term resilience through a combination of agriculture, water, food systems, nutrition and social protection interventions, grounded at all times in community-level realities and local institutions.

B. Medium- and long-term actions to build resilience through sustainable agriculture

42. The second track in the twin-track approach involves building longer-term livelihoods and strengthening food production resilience by eliminating the root causes of hunger, poverty and malnutrition.[22]

Access and secure tenure for women

43. Owing to a range of legal and cultural constraints regarding land inheritance, ownership and use, fewer than 20 per cent of landholders are women. Providing women landowners with the same access to inputs as their male counterparts would increase their yields, raise total agricultural output in developing countries and lift

[22] These outcomes are defined in both the updated Comprehensive Framework for Action and the outcome document of the United Nations Conference for Sustainable Development, "The future we want" (resolution 66/288).

millions of people out of hunger.[23] The gender gap is remarkably consistent across countries and contexts: women have less access than men to agricultural assets, inputs and services and to rural employment opportunities. The gender gap is found for many assets, inputs and services and it imposes costs on the agriculture sector, the broader economy and society as well as on women themselves. Women in rural Africa and Asia are pooling millions of dollars to buy better seeds and tools, yet women farmers still receive only 5 per cent of available credit. Designing more gender-responsive agricultural development programmes would be a positive step towards reducing gender inequalities in agriculture.

Sustainably increasing agricultural productivity

44. Sustainable agricultural intensification is an immense challenge for the smallholder farmer. In all agricultural production systems, the transition to more sustainable practices requires the careful harnessing of ecosystem services. To utilize their full potential, agricultural ecosystems must be managed as part of the wider landscape of nature. Reinforcing the natural resilience of the land is fundamental. Deforestation, degradation of catchments/watersheds, land degradation, depletion of reefs and coastal ecosystems, especially coral reefs and mangroves, all reduce nature's productivity as well as its resilience and its capacity to provide protection to human communities.

45. According to FAO figures, aquaculture is the fastest-growing food sector, with an annual growth rate of nearly 8 per cent over the past decade. It now supplies 60 million tons a year, or close to 50 per cent of the global food fish supply.[24] The need for an ecosystem approach to the intensification and management of the sector has been recognized as a key strategy for integrating aquaculture with other food systems. Rice-fish farming and integrated multitrophic aquaculture are good examples of sustainable integration as a base for intensification.

46. Diversification of varieties, breeds and production activities in all agricultural landscapes is another way to sustainably increase resilience and productivity. In recent years, 50 per cent of the increase in crop yields has come from new seed varieties, such as the fast-maturing variety, "new rice for Africa", which has transformed local economies in several parts of the continent.

47. Greater diversity in agricultural ecosystems may lead to healthier and more sustainable nutrition, which is an important consideration for producers whose consumption is largely drawn from their own production. More needs to be done, especially at the farm level, to build local capacities to conserve and use genetic biodiversity. Technical solutions exist, and research systems are focusing on the better integration of rural resources and processes.[25]

Enhancing market access

48. The further liberalization of agricultural trade remains a high priority for multilateral trade negotiations under the World Trade Organization. While, on average, OECD countries have lowered agricultural producer subsidies by around

[23] FAO, *The State of Food and Agriculture 2010-2011: Women in agriculture: Closing the Gender Gap for Development* (Rome, 2011).

[24] FAO, *The State of the World's Fisheries and Aquaculture 2012* (Rome, 2012).

[25] See IFAD, *Rural Poverty Report 2011* (Rome, 2010).

44 per cent since 2000, in many developed countries support for farmers continues to be significant (averaging 18 per cent of gross farm receipts).[26] New agricultural trade issues have arisen following the spike in food costs in 2008, when a number of major food exporters introduced export restrictions, highlighting the need of greater attention to the concerns of food-insecure and food-importing countries.[27]

49. Evidence shows that strong agricultural and food cooperatives contribute to improved food security and are highly resilient to financial, environmental and other types of shocks and crises. Cooperatives provide a range of services to their members, in particular, access to productive inputs, markets and information and communication. They also ensure that their members obtain access to and management of natural resources, as well as to have a voice in policy decision-making processes. However, cooperatives are able to thrive and act as a vehicle for inclusion and market integration only if they have an appropriate enabling environment. In the context of the 2012 International Year of Cooperatives, the international community is promoting the role of agricultural and food cooperatives in employment generation, poverty alleviation and improved food and nutrition security.

Measures to manage the effects of food price volatility

50. The impact of world price changes on household food and nutrition security is highly context-specific and depends, inter alia, on the individual commodity, national policies that affect price transmission from world markets to domestic markets and the demographic and production characteristics of different households. Such a diversity of impacts, both within and between countries, highlights the need for improved data and analysis so that Governments can implement more effective policies.

51. In June 2012, at its meeting in Mexico, the Group of 20 welcomed the progress made in implementing its 2011 Action Plan on Food Price Volatility and Agriculture adopted by Ministers of Agriculture of the States members of the Group. Vice-Ministers of Agriculture submitted a progress report on the implementation of initiatives established in the action plan, including key findings and recommendations on sustainable agricultural production and productivity growth.[28] They welcomed progress made in the implementation of the Agricultural Market Information System (AMIS) and the launch of the "AgResults" initiative, which utilizes prize awards to incentivize innovation of new agricultural products and systems of particular importance to low-income countries. The first meeting of the Global Food Market Information Group convened in February 2012 to review procedures and tools that individual country members use for drawing national supply and demand balances for AMIS commodities and to establish the basis for an agreed methodology. The first meeting of the AMIS rapid response forum, held in April 2012, considered the market situation and outlook for AMIS commodities.

Biofuels

52. Expansion of biofuels production poses new challenges for food security insofar as there is a sizeable diversion of certain staple food commodities to fuel markets, a diversion that has an impact on the affordability of food. The growing linkage

[26] See http://stats.oecd.org/Index.aspx?DataSetCode=MON20113_1.

[27] High-level Panel of Experts, Price volatility and food security, 2011 report No. 1.

[28] See http://www.g20.utoronto.ca/2012/2012-0518-agriculture.pdf.

between food and energy markets increases potential for shocks to be transmitted from one to the other. On the production side, sustainable intensification approaches and cutting waste are key measures for reducing agriculture's dependence on energy-intensive inputs. On the demand side, measures such as removing subsidies or increasing flexibility in biofuel mandates have been proposed to reduce the pressure on food markets from biofuels, particularly first-generation biofuels from food crops. Opening international markets for both feedstocks and renewable energy products can shift production to where it is most economically efficient, but safeguards may still be needed in producing countries to encourage environmentally sustainable production. At the same time, efforts should be made to accelerate scientific research on second-generation biofuels that would compete less with food.[29]

Promoting research, technology diffusion and transfer

53. Technology can facilitate the sort of swift adaptability that will increasingly be necessary as climate change and other pressures mount. Information and communications technology is enabling innovative techniques to reach users in all but the most remote areas. The global diffusion of cellular and wireless communication technologies, coupled with the increasing ubiquity of the Internet, provide information on market pricing, supply and demand trends and remote technical assistance to farmers. Creating more local capacity to access and use very low-cost information systems is an area of broad consensus.

54. Globally integrated monitoring systems can now produce timely public information with forecasts of food sufficiency in every country around the globe. The utilization of Global Positioning Systems (GPS) technologies as the driver of precision agriculture has allowed growers to produce more, with less crop inputs and energy usage. Utilization of satellite-based remote monitoring and in-field sensing technologies greatly aid in the global and regional monitoring of crop productivity and weather-related impacts. As these technologies are integrated and as the cost of such technologies decline, we are seeing the emergence and wider deployment of sustainable agriculture decision-support tools.[5]

VI. Progress in ensuring means of implementation

55. Developing countries are sustaining their political commitment to increasing agricultural investment following the 2008 food security crisis, and many are increasing the share of their national budgets dedicated to agriculture and rural development. In 2010, the average share of national budgets spent on agriculture was around 6.5 per cent, and seven African countries are allocating more than 10 per cent of their national budgets to agriculture. Of the 30 countries that signed the Comprehensive Africa Agriculture Development Programme national compacts as of March 2012, 27 have developed an investment plan assessed by an independent technical review, and 24 have held business meetings with donors, civil society and the private sector. Of the remaining African countries, eight have launched the process and 10 more are expected to formally do so in 2012.[30]

[29] See http://www.fao.org/fileadmin/templates/est/VolatilityInteragency_Report_to_the_G20_on_Food_Price_Volatility.pdf.

[30] See www.nepad-caadp.net.

56. According to recent data reported by the Development Cooperation Directorate of OECD, total official development assistance (ODA) for food and nutrition security stood at around $11.7 billion in 2010, an increase of 49 per cent in real terms since 2002. Most of the ODA has been allocated to long-term investments in agricultural development, totalling 61 per cent for the period 2008-2010. At the regional level, sub-Saharan Africa received 41 per cent of ODA for food and nutrition security in 2009-2010, followed by Asia with 32 per cent.

57. Half the amounts pledged for agriculture and food security at the L'Aquila Food Security Summit in 2009 have now been disbursed. The Group of 8 countries have increased assistance for short-term food security needs and longer-term development by more than 25 per cent above the levels recorded before the adoption of the L'Aquila Food Security Initiative.[21]

58. The Global Agriculture and Food Security Programme, set up by the World Bank in 2010 as one of the most important elements of the response of the international community for channelling long-term investments in food and nutrition security, received pledges of $1.2 billion in 2012 (of which $917 million is pledged to its public sector window, $248 million to the private sector window, and $40 million pending assignment). A total of $752 million has already been received, of which $658 has been allocated to country-led programmes of 18 countries. Projects supported in 2010 and 2011 are expected to impact 7.5 million beneficiaries. During 2012, six new countries will receive support from the programme: Burundi, the Gambia, Kyrgyzstan, Malawi, Senegal and the United Republic of Tanzania. In September 2012, a new call for proposals is expected. The programme includes a wide range of stakeholders in its governance structure, especially at the country level.

59. While private investment in agriculture can be a boon to productivity, efforts to attract large-scale foreign investment pose risks where policies and institutions do not provide secure tenure and adequate safeguards to domestic smallholders and their communities. It is in response to a wave of such foreign investment following the 2008 food security crisis that a number of United Nations entities initiated discussions on the Principles for Responsible Agricultural Investment, which are currently ongoing in the framework of the Committee on World Food Security.[31]

VII. The way forward

60. At the United Nations Conference for Sustainable Development in June 2012, world leaders reaffirmed their commitments regarding the right to safe, sufficient and nutritious food, consistent with the right to adequate food and the fundamental right to be free from hunger. They further reaffirmed their commitment to enhancing food security and access to adequate, safe and nutritious food for present and future generations in line with the Five Rome Principles, including for children under the age of 2, and through national, regional and global food security and nutrition strategies. They recognized that farmers, including small-scale farmers and fisherfolk, pastoralists and foresters, can make important contributions to sustainable development through production activities that are environmentally sound, enhance food security and the livelihood of the poor and invigorate production and sustained economic growth.[32]

[31] See http://unctad.org/en/Pages/DIAE/G-20/PRAI.aspx.

[32] See resolution 66/288.

61. One of the most important outcomes of the United Nations Conference for Sustainable Development was the decision to launch an inclusive and transparent intergovernmental process open to all stakeholders, with a view to proposing a set of global sustainable development goals to be agreed upon by the General Assembly.[32] The international community has begun to think about how a goal related to advancing food and nutrition security would figure in the post-2015 development agenda, given that the first Millennium Development Goal has as target a halving of hunger by 2015 and that, even if achieved, this would leave the goal of completely eradicating hunger and malnutrition unfulfilled.

A. Build resilience

62. Given the increasing and multiple pressures on agriculture and on the natural resource base, business as usual is no longer an option. Climate-resilient agriculture that ensures food security and protects the environment must become a global priority. In order to avert a food crisis, we must continue advances in agricultural productivity in ways that are environmentally sustainable. Enhancing food system diversity generally strengthens resilience and the proper balance between diversity and specialization will need to be found for the local context. Even as local production is strengthened in countries now heavily dependent on food imports, agricultural trade will continue to play a critical role in ensuring global food security.[5]

63. The reliability and timeliness of early warning systems needs to be improved, and the capacity to develop and utilize such systems should be strengthened at both the national and regional level, with a focus on countries that are particularly vulnerable to price shocks and food emergencies.[33] Important areas of intervention, including social protection and risk reduction, are often underfunded. Food assistance can help build the basis for long-term food security, but to do so it is critical that it support as far as possible local and regional food producers. The use of a varied set of food assistance tools, complemented by innovations in how food is procured, will serve as a strong basis for food security in the longer term.

B. Close the gender gap

64. Although women comprise around 43 per cent of the agricultural labour force in developing countries, ranging from 20 per cent in Latin America to 50 per cent in Eastern Asia and sub-Saharan Africa, women smallholders across all regions continue to have less access than men to productive resources and opportunities. The gender gap persists for many assets, inputs and services, including land, livestock, labour, education, extension and financial services and technology, and it imposes costs on the agriculture sector in terms of lower productivity, the broader economy and society, as well as on women themselves. Closing the gender gap in access to productive resources in agriculture is thus a high priority.

[33] FAO, IFAD, IMF, OECD, UNCTAD, WFP, the World Bank, the World Trade Organization, the International Food Policy Research Institute and the United Nations High-level Task Force, "Price Volatility in Food and Agricultural Markets: Policy Responses", 2 June 2011.

C. Address the food, water, energy, climate nexus more effectively

65. Increasing productivity in a sustainable manner in the face of a changing climate will require better management of land, water, soil and genetic resources through practices such as conservation agriculture, integrated pest management, agro-forestry and sustainable diets. Techniques to increase water efficiency are often the same as those used in sustainable crop production intensification. Transitioning to more sustainable diets and minimizing waste can also reduce demand for water, a 50 per cent decrease in food losses and waste at the global level would save 1,350 km^3 a year. Recycling and reusing waste water, both within agriculture and also from urban to agricultural uses, can also contribute to solving the growing water shortages.[34]

66. In addition to water, food and agriculture are increasingly linked to energy policies, and the two sets of policies need to be coordinated in a fashion that ensures food security. Since agriculture and food security are also increasingly affected by climate change, greater research on adaptation of agricultural systems is called for in both developing and developed countries. Food and agricultural production methods and systems that can both enhance adaptation and contribute to mitigation are to be preferred.[35] Mechanisms that support improvements in energy efficiency and the use of renewable energy technologies in the food sector could be incorporated into existing policies to promote win-win situations and capitalize on potential benefits on both fronts.[36]

67. Integrating agricultural development and food security into the post-2015 agenda through sustainable development goals will require that the eradication of hunger and the achievement of food security for all be sustainable over the long run. This in turn requires that agricultural practices of all farmers, large and small, become environmentally sustainable. In this regard, Member States resolved, in the outcome document of the United Nations Conference for Sustainable Development (resolution 66/288), "to strive to achieve a land-degradation neutral world in the context of sustainable development". We must recognize that the many millions of people who manage agricultural systems, from the very poorest to the most commercialized producers, constitute the largest group of natural resource managers on earth. Their decisions, as well as those of the world's 7 billion consumers, will shape global food and nutrition security and the health of the world's ecosystems into the future. The challenge, in the wake of the United Nations Conference for Sustainable Development, is to support better decisions by building more inclusive and effective governance of agricultural and food systems.

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[34] FAO, *Towards the Future We Want* (Rome, 2012).

[35] See Intergovernmental Panel on Climate Change, "Special Report on Renewable Energy Sources and Climate Change Mitigation" (see http://srren.ipcc.wg3.de/report).

[36] FAO, "Energy-smart food for people and climate" (see http://www.fao.org/docrep/014/i2454e/i2454e00.pdf).